Zero Retries issue 0212a 2025-07-26

Zero Retries is an independent newsletter promoting technological innovation in and adjacent to Amateur Radio, and Amateur Radio as (literally) a license to experiment with and learn about radio technology. Radios are computers - with antennas! Now in its fifth year of publication, with 2800+ subscribers.

About Zero Retries

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Publishing Note:
This issue of Zero Retries is an “errata” edition of Zero Retries 0212 to add what should have been a signifiant mention in the ZR > BEACON section about the recent Memorandum of Understanding between Radio Relay International and ARRL. There are also some additional details in the M17 article that I had meant to include, as well as adding the comments summary from the previous issue.

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Request To Send

Commentary by Editor Steve Stroh N8GNJ

Paid Subscribers Update

My thanks to **Prefers to Remain Anonymous 06** for *renewing* as an **Annual Paid Subscriber** to Zero Retries (2nd year!) this past week!

My thanks to **Prefers to Remain Anonymous 78** for *upgrading* from a free subscriber to Zero Retries to an **Annual Paid Subscriber** this past week!

My thanks to **Prefers to Remain Anonymous 79** for *upgrading* from a free subscriber to Zero Retries to an **Annual Paid Subscriber** this past week!

Financial support from Zero Retries readers is a significant vote of support for the continued publication of Zero Retries.

# # #

This Past Week…

I was explaining to an email correspondent that this past week has included a *comical* combination of situations… health issues, fatigue (mental and physical), computer issues, some urgent last minute help given to the local organization where I volunteer, power interruptions, and yesterday, a global outage of Starlink for a few hours right in the middle of my work. Really… *it is to laugh*. Fortunately my several battery backup units held up to keep some critical systems online during the power outage (Li-Ion UPS units *rock*), and using my mobile phone as a hotspot got me some Internet access when Starlink (*all*… Starlink) was offline. Even with that outage… by my casual calculations, while Starlink isn't quite "5-9s" reliable in 2025, it's currently running at 99.966 reliable, which I can settle for.

# # #

Kudos to ARRL For Showing Up During FCC Comment Periods

Long time readers of Zero Retries will readily recall that despite trying to generally "avoid politics" in Zero Retries, I've had some significant criticisms of ARRL in their approach to Amateur Radio (dismissive of "mere Technicians" and those that ARRL doesn't count as "active" for not having become ARRL members) and organizational shenanigans (which, unfortunately, are continuing).

But I have to admit that I admire the specific action of ARRL of consistently "showing up" with comments to the FCC on every matter (that I've been tracking since starting Zero Retries) that is of significant potential impact to Amateur Radio.

But my admiration of ARRL's actions with the FCC isn't just "ARRL shows up", but more significantly, *ARRL's progressive stance* in its comments to the FCC in advocating for substantive regulatory reform to remove the arcane symbol rate limits and bandwidth limits on US Amateur Radio VHF / UHF bands. I strongly agree with those specific recommendations because I view those issues as substantively hobbling progress on Amateur Radio's relevance in the 21st century and its ability to experiment with high speed data communications, some of which require the use of wider bandwidths than are currently allowed in the US FCC Part 97 regulations.

ARRL consistently "showing up" for FCC comments isn't, by itself, notable. For example, of late Open Research Institute (ORI) has also been "consistently showing up" to comment to the FCC (with consistently progressive stances). But such a progressive stance for an organization that is now more than a century old, and its consistency, seems pretty remarkable (to me) of late.

And, ARRL has made other progressive actions of late such as:

- ARRL providing a substantive presence (including headquarters staff) at the HamSCI 2025 conference,
- The expansion of ARRL Teachers Institute on Wireless Technology in 2025,
- ARRL concluding a Memorandum of Understanding with Radio Relay International (see ZR > BEACON article below), and most recently,
- ARRL's Washington counsel David R. Siddall (K3ZJ) meeting in person with staff of the FCC's Wireless Telecommunications Bureau to advocate for progressive changes to FCC Part 97 regulations for Amateur Radio.

While I'm certainly not ignoring the many organizational issues with ARRL, those are almost "internal issues". To the FCC, which is US Amateur Radio must continue to "impress" for Amateur Radio to have a real future, ARRL is, again, "showing up", and other Amateur Radio organizations are not, despite their organizational focus and internal resources.

Solely for those progressive actions, despite the organizational issues, ARRL may "earn back" my membership when it's due for renewal late this year. Amateur Radio needs organizations that "show up" to external challenges, and ARRL is the only organization with significant resources *that does "show up" consistently*.

For transparency with my comments above, I was grateful that when I applied to ARRL to list the inaugural Zero Retries Digital Conference 2025 in ARRL's various promotions of conferences (online, QST, QEX, etc.), I was mostly casting a wide net and giving ARRL the benefit of the doubt with that request. Given that ZRDC 2025 s a privately sponsored conference, I expect ARRL to decline the request (especially given there was no affiliation with ARRL - ZRDC isn't sponsored by an ARRL affiliated organization). To my surprise and delight, within hours I received a positive reply and acceptance for ARRL to promote ZRDC 2025. ARRL has promised to send some sponsorship material for ZRDC for 2025, and thus became ZRDC 2025's first sponsoring organization.

# # #

Comments From Groups, Even Informal Groups

In browsing through the Comments filed for FCC Docket SB 25-201, I began noticing that comments that were made in the name of a group stood out a bit from comments made by individuals.

Thinking about this a bit more, which projects more “gravitas”?

Southwest Mugwump Space Operations Society (SMSOS),

or

Jonathan Q. Doe KZ8XYZ

Especially if there are multiple co-signers of the comments from SMSOS.

I don’t think it’s a critical distinction that a “group” formed for submission of comments is an informal one.

I’m not suggesting to “create an imaginary group” to masquerade an individual’s comments as a group that doesn’t actually exist. For example, though future comments that I may file as “Zero Retries Newsletter” are the largely my perspective, they’re formed from “standing” of having written the (very real) Zero Retries Newsletter for a number of years now. (And, I would disclose that Zero Retries is almost entirely one person - Steve Stroh N8GNJ.)

Thus if you’re one of a group of like-minded co-conspirators for technological advancement in Amateur Radio, and the next time there is a chance to comment to the FCC in a future Request For Comments (see the first article)…

I suggest thinking up a a fun, or slightly impressive name for the group. Have one person formulate a reasonable set of comments that that expresses the general consensus of the group. Then quickly pass it around via email (or shared editing system like Google Docs), spruce it up, add all the names of the co-signers, and submit it to the FCC.

That said, I don’t suggest masquerading one’s completely solo comments as a group that exists solely in your imagination.

And, if you have a “group” or other entity, like I do with Zero Retries, I think that’s equally acceptable when filing comments.

And of course, this being a sillier than usual week, my tired brain wandered a bit on this topic. Somehow I began to imagine what comments would look like from a few imaginary technical Amateur Radio groups such as:

- Cornbread Road Technical Society
- Mammoth Falls Mad Scientists Club
- Swift Enterprises Amateur Radio Association
- Amateur Radio Operators of Clavius Base

Formulating such comments, from those fictional perspectives, might be a fun writing (and perhaps reading) exercise.

Of course, I’m not suggesting (***really…***) filing actual comments from imaginary groups. That said, I was surprised to read that the FCC accepted and published several comments that authored by obviously from false identities, including a number from “AST”.

Thus I think I’ll add this “consider filing comments as a group” perspective to my new document in progress **The Zero Retries Guide to Filing FCC Comments**.

# # #

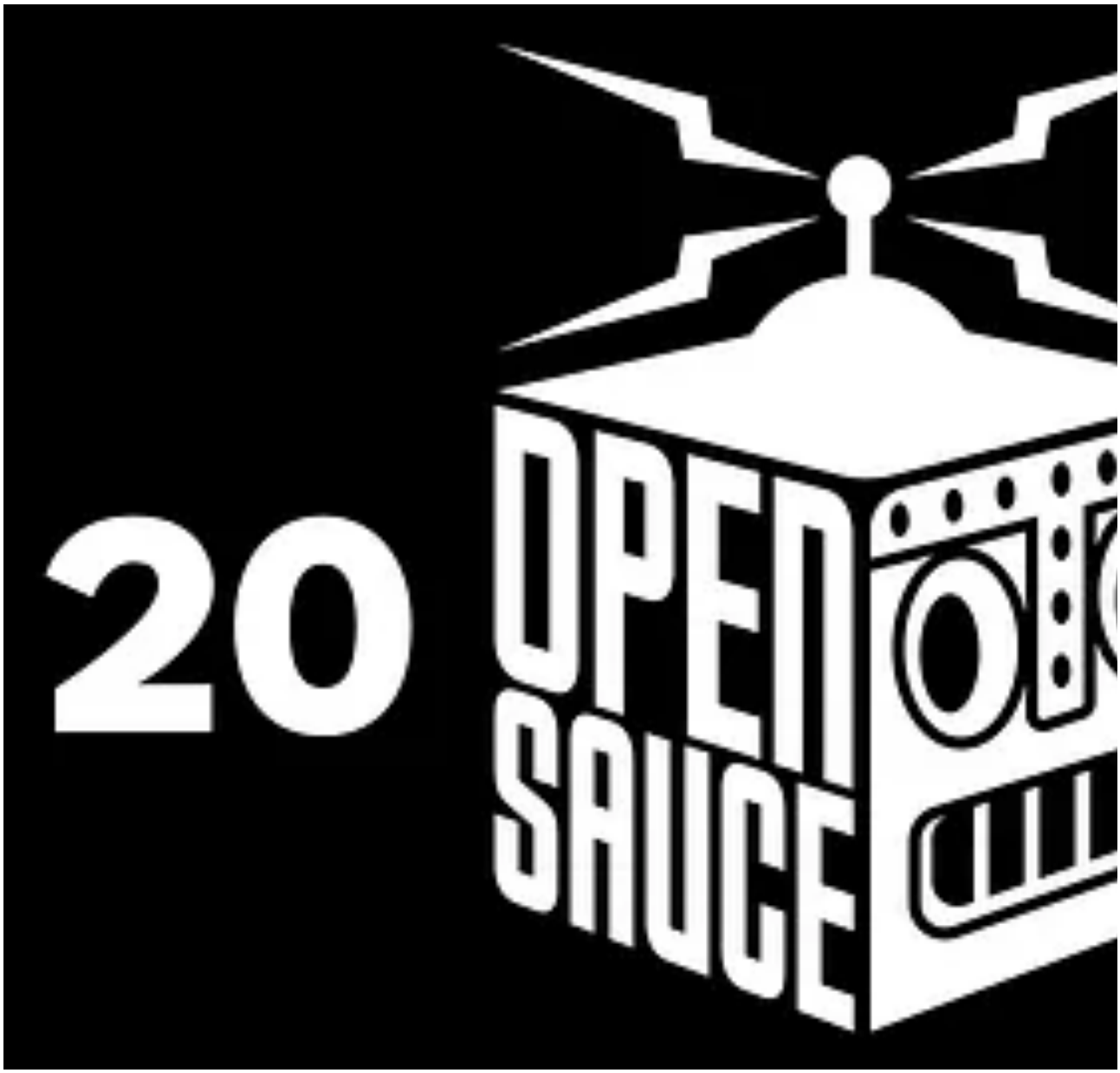

Image courtesy of Open Sauce

Open Sauce 2025 (and 2026)

Words, even photos here in Zero Retries (or any text / photo media) can't do justice to this event that just concluded last weekend. But kudos to Jeff Geerling KF0MYB for trying - Open Sauce is a confoundingly brilliant Bay Area event.

Think of Open Sauce events as a bigger and better Maker Faire… only much bigger and much better. I suggest viewing the videos by KF0MYB - Day 0, Day 1, Day 2 for a flavor of the event. While there's a heavy emphasis on "physical" exhibits such as 3D printed projects and lots of robots, there's ample emphasis on electronics and the understanding of technology and experimentation… and most endearingly, intellectual curiosity.

Good news:

- The energy and creativity and cross-fertilization exhibited at Open Sauce 2025 in their new venue at the San Mateo (California) County Event Center was palpable.
- Open Sauce has already "flipped over" to actively planning (accepting applications for booths and selling attendee tickets) to **Open Sauce 2026** to be held 2026-07-17 thru 19.
- To my amazement… *Exhibitor booths are free for individuals, nonprofits, and open source projects*.
- There were many, many (perhaps the majority) youth and younger adults at this event. The "gray hairs" that dominate most Amateur Radio events were conspicuously in the minority at Open Sauce 2025. Thus if one wants expose an activity like Amateur Radio to young techies… Open Sauce is a place to do so.

- The sponsors were impressive - YouTube, FUJIFILM, DigiKey.
- “Amateur Radio” has a year to plan to exhibit… something… at Open Sauce 2026.

Bad news:

- From what little I could see, there was no representation of Amateur Radio at Open Sauce 2025. (There apparently were some demonstrations of LoRa and Meshtastic technology.)
- The event is held in the very expensive (to travel and visit) San Francisco Bay Area, so it won’t be cheap to be attend.
- With so much interesting going on, Amateur Radio would really have to show off *something compelling* to the Open Sauce attendees. KF0MYB explained that well - even walking around he didn’t get to see the entire event even at a quick pass, although his stature as a YouTube creator meant he was getting stopped and thanked a lot.
- The Amateur Radio

Open Sauce has made such an impression on me that if I’m left to choose between Hamvention 2026 and Open Sauce 2026… I’m probably going to choose the latter.

What could Amateur Radio demonstrate?

- I hope that the IP400 Network Project will be mature and capable by then. Showing off “no Internet, long range” data communications at data rates of 100 kbps+ might make an impression - big display with a BBS?
- Amateur Radio satellite communications? Perhaps tracking a pass with the ISS and trying to arrange an astronaut to say a few words to the Open Sauce 2026 attendees?
- Launching an Amateur Radio research balloon and have a big display tracking its progress throughout the event (on a big screen)?
- Portable, open source software defined radios that can do different things with different software loads?
- Software Defined Receivers displaying multiple segments of the spectrum?
- Open Source M17 Repeater (and encourage Amateur Radio attendees to bring and use their M17 portable radios)?
- Amateur Radio Digital Television transmitting from some mobile device back to a booth?
- Emphasis that Amateur Radio were the original open source technology community and that Amateur Radio (doesn’t need to) depend on Internet, satellite, cellular, Wi-Fi, Bluetooth, etc.
- Amateur Radio Astronomy?
- HamSCI / Citizen Science activities?
- Building antennas for Amateur Radio activities?
- Display of global WSPR stations being receive realtime?
- A working display for making Earth Moon Earth (EME) contacts?
- Special Event Station with many other Amateur Radio Operators standing by to make a contact with an interested Open Sauce attendee (overseen by a control operator)?

We could do this folks!

# # #

Weekends Are For Amateur Radio!

While I’ll have some Amateur Radio fun this weekend, given this past week I won’t have the luxury of taking the entire weekend off. I have to make more progress on a book or two to have ready by ZRDC 2025. But I did figure out a way to probably safely repair the bent radio pole caused by the Wicked Whatcom Winter Winds, so perhaps that will be the weekend project.

Have a great weekend, all of you co-conspirators in Zero Retries Interesting Amateur Radio activities!

Steve N8GNJ

Leave a comment

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ZRDC 2025 Update 07/25/2025

By Tina Stroh KD7WSF
Zero Retries Digital Conference Manager

This is the first of a series of weekly updates leading up to Zero Retries Digital Conference 2025.

With just over 7 weeks to ZRDC 2025, Zero Retries is in full gear putting this conference together. For the first time in several years, the PNW will have a digital communications conference and we couldn't be more excited.

In sending out mailings to HAM clubs in Washington, Oregon and British Columbia, I have received two emails from Canadian HAMS regarding in-person attendance as it relates to their political viewpoint. I totally respect their decision. *However*, if you look at the registration page, I have created multiple ways to participate just for just this reason. The options are as follows:

1. Attend in-person. Automatically entered into drawings for door prizes.
2. Live visual/audio feed via Zoom. We have taken on the additional cost of having the conference set for live audio/visual feed via Zoom so that people can be in their own home, Ham shack, etc. and participate with the speakers and audience. Automatically entered into drawings for door prizes.
3. Order a copy of the video recording. Our Video Director states the recording will be available approximately two weeks after the conference. It can be purchased on the registration page or in the Zero Retries store.
4. Download a free copy after 1/2026.

Please take this opportunity to share with other HAMS who might be interested and who might not subscribe to Zero Retries.

If you noticed above, yes, I did mention door prizes. We will not be selling tickets to enter the drawing for those door prizes. Your purchase to attend the conference, either in-person or virtual attendance, will automatically enter you in the drawing. Door prize donations received to date are:

- Connect Systems CS7000 M17 M17 portable radio
- HydraSDR RFOne Software Defined Receiver (2 units)

This seems just the right time to thank our sponsors ARRL, ARDC, Connect Systems, and HydraSDR (Benjamin VERNOUX).

Looking forward, each week I will add updates to the Zero Retries Newsletter and will be posting them as well on the conference webpage. If you have any questions, please don't hesitate to contact me at tina@zeroretries.net or 206-618-3511. I have included the links below.

Zero Retries Digital Conference 2025

Registration for ZRDC 2025

Zero Retries Newsletter

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We Showed Up for Comments on FCC SB Docket 25-201

By Steve Stroh N8GNJ

Comments on FCC Docket SB-25-201 were due 2025-07-21, and many of us Amateur Radio Operators showed up to offer comments to the FCC that AST Space Science should not be allowed to use (or continue to use) 430-440 MHz.

I'm proud to be in the good company of 2300+ individual and organization commenters on this action. My comments were pretty general compared to some really well-researched comments, though I seem to be the only one (in the few comments that I was able to read) that made the point that AST's satellites will be using enormous antennas in Low Earth Orbit, thus despite a relatively low transmit power, the resulting signals into that band will be very powerful.

It was heartening to see that there were many comments from outside the US where 430-440 MHz is their *entire* 70cm Amateur Radio band. Many of the space-related organizations from all over the globe provided well-stated comments. There were also some new organizations that provided great comments - see below.

It was disheartening to note the absence of some organizations (including some with ample resources) with ties to Amateur Radio that didn't bother to file comments. This is inexplicable to me… this issue is *existential* to Amateur Radio, especially (again) in countries where, if AST is allowed to use 430-440 MHz will render much of that band unusable for Amateur Radio communications. While I won't call out the organizations who didn't file… their absence from the list below is conspicuous.

Here's a list of all the entities that have filed a Comment in 25-201 as of 2025-07-25, generated by the FCC - Proceeding 25-201 History Report. It would have been great and even more useful if this list had hyperlinks to each Comment, but it doesn't.

I didn't have a good way to view all the comments; the best I could do is scan the list for familiar and organizational names and look at those. Thus the following list should be considered somewhat random.

Amateur Radio on the International Space Station (ARISS)

https://www.fcc.gov/ecfs/search/search-filings/filing/1072175432072

Amateur Radio Union of Serbia SRS

https://www.fcc.gov/ecfs/search/search-filings/filing/10721967604677

Amateur Satellite Corporation (AMSAT)

https://www.fcc.gov/ecfs/search/search-filings/filing/10721071371102

AMSAT-Deutschland e.V. (AMSAT-DL) (Germany)

https://www.fcc.gov/ecfs/search/search-filings/filing/10721074804033

AMSAT-Francophone (French Speaking)

https://www.fcc.gov/ecfs/search/search-filings/filing/1072070275133

AMSAT-HB (Switzerland)

https://www.fcc.gov/ecfs/search/search-filings/filing/10716506318007

ARRL

https://www.fcc.gov/ecfs/search/search-filings/filing/1072110100328

Bulgarian Federation of Radio Amateurs (BFRA)

https://www.fcc.gov/ecfs/search/search-filings/filing/10721259270211

German Earth Moon Earth Community

https://www.fcc.gov/ecfs/search/search-filings/filing/10717765012655

National Amateur Radio Alliance (NARA) (US)

https://www.fcc.gov/ecfs/search/search-filings/filing/10725350827462

Open Communications Organization, Inc.

https://www.fcc.gov/ecfs/search/search-filings/filing/107213094624396

Open Research Institute (ORI)

https://www.fcc.gov/ecfs/search/search-filings/filing/1072189554716

Polish Amateur Radio Union

https://www.fcc.gov/ecfs/search/search-filings/filing/10720390520564

Radio Amateur Association of Greece (RAAG)

https://www.fcc.gov/ecfs/search/search-filings/filing/107201617401837

Radioamateur Society of Macedonia (RSM)

https://www.fcc.gov/ecfs/search/search-filings/filing/1071992183554

Radio Club Argentino

https://www.fcc.gov/ecfs/search/search-filings/filing/10721764029448

Radio Society of Great Britain (RSGB)

https://www.fcc.gov/ecfs/search/search-filings/filing/10721151315294

Rede dos Emissores Portugueses (REP)

https://www.fcc.gov/ecfs/search/search-filings/filing/107181895111592

Unión de Radioaficionados Españoles (URE) (Spain)

https://www.fcc.gov/ecfs/search/search-filings/filing/10721144904101

…

As I was scanning through the lists, I found a few friends, notables, and random good comments:

Donald Rotolo N2IRZ

https://www.fcc.gov/ecfs/search/search-filings/filing/1071977281760

Peter Gülzow DB2OS

https://www.fcc.gov/ecfs/search/search-filings/filing/10718802726591

Ward Silver N0AX

https://www.fcc.gov/ecfs/search/search-filings/filing/107211208905636

Brian Whitaker AG6WR

https://www.fcc.gov/ecfs/search/search-filings/filing/10716806609355

Bob Witte K0NR

https://www.fcc.gov/ecfs/search/search-filings/filing/10719207574497

Takahiro Yamauchi 7K1BIB / AC1AM

https://www.fcc.gov/ecfs/search/search-filings/filing/10722163976231

This was an interesting filing by "AMSAT Italia":

https://www.fcc.gov/ecfs/document/1071825532185/1

It's a 2022-09-07 letter from International Amateur Radio Union (IARU) titled Guidance for National Amateur Radio Societies on Endorsement of Amateur Satellite.

…

The only non-Amateur Radio filing that I saw (but, again, I scanned…) was a scathing comment from T-Mobile USA:

https://www.fcc.gov/ecfs/search/search-filings/filing/10716096859141

Of course, T-Mobile USA is partnered with SpaceX / Starlink for a similar service (which is now operational). In my mind, this gives them significant standing to "call out" issues with AST's filings with the FCC.

…

Reply Comments on FCC Docket SB 25-201 Due 2025-08-05

As of this issue of Zero Retries, we have 11 days until FCC Docket SB 25-201 Reply Comments are due to the FCC:

Tuesday 2025-08-05.

In what I've observed of "Reply" Comments, pretty much anything goes for filing something that will be accepted by the FCC. As with Comments, whether FCC staff, and ultimately the actual Commissioners will actually read, and consider, the content of any particular Reply Comment depends entirely on the quality and relevance of the content in the Reply Comment.

In my Comments and Reply Comments, I try to make my points as "conversationally readable and pertinent to the big picture of the subject under discussion. In this case, what is the impact of AST's use of 430-440 MHz from our collective "standing" as Amateur Radio Operators that are authorized to, and actually using 430-440 MHz?

In my opinion, entities like ARRL are better equipped to quote the minutiae of FCC regulations chapter and verse. Thus *I* generally don't do so. In Reply Comments, I like to reference a few good Comments, such as the comments filed by ARRL, ARISS, NARA, and ORI and "riff" on those as my Reply Comments (generally agreeing, and amplifying). And if, in my comments, I got anything significantly wrong, or had a significant omission, I call myself out.

Every* Comment, and Reply Comment *helps*, folks! If Amateur Radio doesn't care enough to provide feedback to the FCC, *that tells the FCC a lot.

Leave a comment

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M17 Community Moves Past Mainstream MMDVM Support

By Steve Stroh N8GNJ

Reference - **Zero Retries 0211** - MMDVM "Versus" M17

Moving On

It's now a week after "the big bomb" was dropped on the M17 community with the removal of M17 Support from the primary software distribution for Multi Mode Digital Voice Modem (MMDVM) hardware. The result of that (unannounced in advance) change was that for fans and users of M17, M17 capability "just suddenly broke" in their MMDVM hardware.

In my mind, at this point, the "M17 support in mainstream MMDVM" issue is now settled. Absent a significant change of perspective by Jonathan Naylor G4KLX, or a change in technical leadership in the MMDVM Project, support for M17 will not return to "mainstream" MMDVM software or hardware.

In my mind, this situation is not dissimilar to a marital divorce which was bitter in the moment, but now mostly amicable. My sense from many communications behind the scenes is that the majority of the M17 community respects the decision of G4KLX to discontinue his personal support of M17, and wishes him (and the MMDVM Project) well.

And now the M17 community is moving on from dependence on M17 support in "Mainstream" MMDVM. Having invested in MMDVM units at least in part to be able to use M17, members of the M17 community want to continue to use their MMDVM hardware for experimentation with M17.

The good news is that there is now a "recovery" plan to do so.

Recovery - The WPSD M17 Community Fork

> **What is This?**
>
> This is a community-maintained fork of the WPSD digital voice hotspot/repeater distribution, based on the June 2025 image of WPSD and the last version of WPSD Git repositories before M17 support was removed.
>
> This fork was created in response to the decision by the original WPSD maintainers to remove M17 digital voice mode support from the official distribution.
>
> Our goal is to ensure continued support for the M17 protocol, enabling both hotspot users and repeater operators to keep using WPSD as a base for multi-mode digital voice communication, including M17.
>
> …
>
> **What Has Changed**
>
> This image is a direct continuation of the WPSD system with M17 support restored and preserved.
>
> …
>
> **Development Philosophy**
>
> This fork is intended to preserve the full-featured, multi-mode functionality of WPSD, including the open-source M17 protocol, which many operators rely on for experimentation and everyday use.
>
> We commit to:
>
> - Keeping M17 fully supported.
> - Maintaining compatibility with future M17 developments.
> - Ensuring regular syncing with upstream (where possible and appropriate).
> - Respecting the original licensing and intellectual property of WPSD.

As evidenced by the Wiki history page, the M17 community has Michael Clemens DK1MI to thank for this early work to restore M17 functionality to MMDVM units.

On DK1MI's blog (rz01.org) - WPSD-M17 Community Fork, he explains a bit more:

> I assume that word has already gotten around in the ham radio community that several digital voice projects have decided to remove support for M17 from their code relatively simultaneously. This concerns, for example, WPSD, Pi-Star and MMDVM. I will not express any opinion here and will stay out of political matters. The fact is that many radio amateurs now suddenly no longer have M17 functionality in their hotspots and were locked out of M17 as a result. Repeater operators are also affected. For more information, please read this excellent post over at Zero Retries.
>
> The M17 team has therefore decided to create a fork of the popular WPSD digital voice distribution. It is certainly not a perfect solution, but it can be seen as an interim solution to get QRV again and create a better solution.
>
> The new WPSD image with M17 functionality can be downloaded here: http://m17project.org/wpsd/.
>
> Please be aware that it has been released as PUBLIC BETA!
>
> More information can be taken from the WPSD M17 Community Fork Wiki page.

The first hands-on report of this new "WPSD M17 Community Fork" that I've seen is from my friend and M17 fan Ren Roderick KJ7B:

> Grabbed the fork of WPSD from the M17 Project page...
>
> After several attempts, including reboots, power cycles, updates to the configurations page, and then a 'real' WPSD update with the fixed update locations...it works again!!!
>
> A couple of notes...the file downloaded from the M17Project page for the RPi is a .7z file that neither RPi Imager nor Balena Etcher will recognize...BUT...expanding the contents of the .7z file shows a WPSD-M17_Rpi-Bookworm.img file that both flashing programs will accept.
>
> The notes on the WPSD M17 Community Fork wiki page indicate that auto-updates have been disabled, but this Discord post by Michael DK1M1 indicates that the updater has been 're-pointed' to the M17 github repository...so ip-address of the M17 hosts are corrected as well...
>
> YAY!!

The second hands-on report of this new "WPSD M17 Community Fork" that I've seen is from Tom Salzer KJ7T, the Editor of The Random Wire newsletter, posted on the M17-Users email list:

> For those wanting to switch a WPSD hotspot to the M17 Project's fork that supports M17, I wrote up the steps I took. Find the guide at:
>
> TechNote: Converting your WSPD hotpot to WSPD-M17.
>
> I hope this helps a few more people make the jump to the M17 fork. It is working fine in my hotspot!

Also, for those of you that, like me, were a bit fuzzy on the history of WPSD, scroll down to towards the bottom of the https://w0chp.radio/wpsd/ page.

It's instructive that WPSD (originally - W0CHP-PiStar-Dash) was itself a fork of PiStar.

Moving Ahead

Note that the WPSD M17 Community Fork, at this moment, is essentially a copy of "Status Quo" of WPSD as of a month ago when M17 support was present. Thus, at the moment, WPSD M17 Community Fork is a near term *recovery* solution, not a long term plan.

My sense of the M17 community is that their their interest in M17 is that it's an open source system for Amateur Radio digital voice on VHF / UHF… and most other systems supported in MMDVM (D-Star, DMR, SF) are not wholly open source. Thus MMDVM's inclusion of those non open source digital modes isn't that relevant - to those mostly interested in M17.

Thus, solely from my perspective, it makes sense for me for the WPSD M17 Community Fork to eventually consolidate down to supporting only M17. That would simplify the support burden and future development considerably. From my perspective, the novelty / interest / experimentation potential of M17 far outstrips the "utility" of DMR. I have some latent interest in D-Star and will retain a radio to be able to experiment with D-Star data. Thus I have no problem investing in MMDVM units dedicated to M17.

But, again, that's purely my perspective without any input (as of this writing) from DK1MI and SP5WWP and other development members of the M17 community. I expect that by the time of the M17 Conference and Zero Retries Digital Conference in September, 2025, there will be some consensus developed within the M17 community as to some longer term goals for M17 development.

N7TAE mspot

In other developments about M17, the mspot project by Tom Early N7TAE is gaining some momentum within the M17 community.

> An M17-only hot-spot (or repeater)
>
> **Description**
>
> This open-source project will build an M17-only repeater or hot-spot for amateur radio.
>
> It should support most any MMDVM-type modem because a significant portion of the project is based on a stripped-down earlier version of G4KLX Jonathan Naylor's MMDVMHost. Unlike MMDVMHost, this project does not support any display device. It also does not support file locking, transparent port, or remote control.
>
> This project will build *mspot*, a single executable program that has a built-in M17 gateway that will connect to both M17 reflectors and URF reflectors. The gateway portion of *mspot* is unique. It doesn't use the popular *time-slice* method characterized by a `clock()` routine, but rather uses a kind of *pass the baton* control scheme.

I found these quotes from N7TAE interesting:

> I spend much more time programming for ham radio than I spend actually doing ham radio! I am an open-source enthusiast. We really need a major manufacturer to support open-source and produce radio hardware that supports open-source development. There are a number of ways for manufacturers to participate here.
>
> …
>
> With the M17 project, I created the first M17 reflector, and more recently, the Universal reflector, an all-mode transcoding reflector that accepts a variety of digital voice clients, including M17. You can try them out using my client, mvoice, or nostar's DroidStar. Since I've become an amateur, M17 is the most exciting thing I've worked on!

N7TAE's enthusiasm for M17 is indicative of the level of enthusiasm I've found overall in the M17 community. mspot is another great option for supporting M17 operation with the now commodity MMDVM hardware that is widely available and affordable.

Exciting Things to Come - LinHT (Formerly, OpenHT) and CC1200 M17 Hotspot

Wojciech Kaczmarski SP5WWP tipped me off to this interesting development that's part of the M17 Project:

LinHT-hw

> Open-source hardware, Linux-based, SDR handheld transceiver. OpenHT successor with greatly simplified hardware - no FPGAs involved. This project offers a replacement board for the Retevis C62 radio, greatly expanding its capabilities.
>
> **Hardware**
>
> The device uses an MCM-iMX93 System on Module (SoM) running Linux. The RF front-end is based on the Semtech SX1255. The chip is used as a complete IQ modulator/demodulator, allowing for true all-mode support.
>
> **Resources**
>
> **CPU:**
>
> - Dual-core ARM Cortex-A55 @ 1.7GHz
> - ARM Cortex-M33 coprocessor @ 250MHz
> - Floating Point Unit
> - ARM Ethos U-65 microNPU (Neural Processing Unit with Tensor Flow Lite support)

Memory:

- 2GB LPDDR4
- 64GB eMMC

RF:

- 500kHz bandwidth complete IQ transceiver

Software

Developers can use C/C++/Python as well as (or in conjunction with) GNU Radio flowgraphs. Tools such as gcc are built-in. The Linux image will be published later.

Supported modes (so far):

- M17 - transmission and reception,
- TETRA - reception only,
- Demo 64QAM transmission at 2Mbps

Other modes can be added later (analog FM/AM/SSB, FreeDV, APRS, etc.).

There is also an article on the LinHT on the M17 Foundation website:

An update on LinHT (OpenHT v2) development process

This is a great idea to leverage a popular and inexpensive "host" hardware as the hard parts of building an open source portable radio. The enclosure, input, display, power system, etc. are all "handled". If this project is successful, it could be "easy" to "transplant" a LinHT board into a Retevis C62 portable radio and thus convincingly prove out the concept of a portable Software Defined Transceiver.

…

Building the CC1200 M17 Hotspot

Michael Clemens DK1MI

> … it was time to build the CC1200 Raspberry Pi hat. This small device can be plugged on the Raspberry Pi Zero's GPIO pins and will then act as a M17 hotspot.

DK1MI details how to physically build (solder surface mount (SMT) components onto the board) the CC1200 board. It's a relatively simple board (by SMT standards) and apparently it works well for purpose. If it became widely available assembled and tested, it might be a nice replacement as a dedicated M17 radio to Internet hotspot.

The software installation is available at:

Installation Script for the M17 CC1200 Hotspot

The future is really bright for M17 and open source digital voice / data, folks!

Leave a comment

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ZR > BEACON

By Steve Stroh N8GNJ

Short mentions of Zero Retries Interesting items.

Open Communications Organization (AM CELL)

This was an interesting discovery from the comments in FCC Docket SB 25-201:

> Introducing The Next Generation Of Amateur Radio
>
> The AM CELL NETWORK
>
> As a AM CELL user or operator, services are offered "as is", we are not a commercial telecommunications provider.
>
> HOST YOUR OWN CELL!
>
> Besides from engaging with the community the best way to turn this vision into a reality is to host your own LTE+ station!
>
> AM CELL™ Specs
>
> - Topology

    - Decentralized Hub And Spoke
- Applications
    - Voice, Text & Data
- Throughput
    - Will be dependent on your local cell
- IP Management
    - Public and privately controlled IP Space. ARDC 44net public IP addresses for Licensed Amateur Radio Operators

I know nothing about this (*ambitious!*) project other than the above and what little detail is provided on the page. I've actually been expecting such a development in Amateur Radio when I began to see open source implementations of small LTE base stations.

Imagine the possibilities of developing resilient micro LTE base stations operating on Amateur Radio spectrum!

I hope to follow up on this project, and creator Mason Turner AF4MT in a future issue of Zero Retries.

# # #

Radio Relay International and ARRL Sign Memorandum of Understanding

> *07/18/2025*
>
> **Radio Relay International® and ARRL The National Association for Amateur Radio® Sign Memorandum of Understanding**
>
> ARRL The National Association for Amateur Radio® (ARRL®) and Radio Relay International® (RRI) have signed a Memorandum of Understanding (MOU). [PDF] The formal agreement, signed by ARRL President Rick Roderick, K5UR, and RRI Board Chairman James Wades, WB8SIW, outlines the value the organizations find in cooperation.
>
> **SEE THE JOINT PRESS RELEASE** [PDF]
>
> ARRL, established in 1914, is the nation's leading advocacy organization for the Amateur Radio Service. ARRL's mission is to promote and protect the art, science, and enjoyment of amateur radio, and to develop the next generation of radio amateurs. ARRL's 71 Sections across North America promote public service with ham radio through programs including the Amateur Radio Emergency Service® (ARES®) and the National Traffic System® (NTS®).
>
> Radio Relay International® (RRI) was established in 2016 to enhance and promote effective nationwide messaging and emergency communications capabilities. Since its founding, RRI has developed an extensive work product consisting of a wide variety of training programs, a tested and evolved National Response Plan, and communications facilities designed to better prepare radio amateurs to serve their community in time of emergency. Central to these goals has been modernization of the NTS.
>
> Both ARRL and RRI recognize the importance of effective public service and emergency communications, including the shared goal of modernizing and enhancing the National Traffic System. "Coordination between our two organizations will prevent duplication of efforts and ensure that both the public and emergency services agencies have access to effective NTS disaster communications facilities," said James Wades, Board Chair and Emergency Management Director for RRI.
>
> The National Traffic System, created by ARRL in 1949, is a network of trained amateur radio operators who ensure the rapid transmission and relay of messages, or "traffic." In addition to basic voice and Morse code or "CW" communications networks, the NTS has recently been modernized through the addition of the Digital Traffic Network, as well as interoperable messaging gateways and specialized software templates developed in association with the Winlink Development Team, which operates an international radio email service well-suited to disaster response.
>
> "Through last year's hurricanes and the recent devastating floods in Texas, we're seeing amateur radio continue to be a vital tool before and during times of crisis," said ARRL Director of Emergency Management Josh Johnston, KE5MHV. "Amateur radio works When All Else Fails®, and traffic handling is an important part of that," he said.
>
> Future plans for the improvement of NTS include the development of additional robust HF digital networks, improved interoperability with local and state emergency communications organizations, and continued development of local and regional VHF and UHF digital "packet radio" network capabilities. Coordination between RRI and ARRL will play an important role in achieving these goals.
>
> www.arrl.org/nts
> www.radiorelay.org

Ideally I would have included this item in Zero Retries 0211 last week (not to mention the original version of this issue) when this news was released, but both issues were packed, and the latter was a complete oversight.

This is a really welcome development in Amateur Radio, a rapprochement between two organizations / projects that, in the end, *share the same mission*. This is Zero Retries Interesting from the perspective that the ARRL NTS is incorporating *additional robust HF digital networks*, let alone *continued development of local and regional VHF and UHF digital "packet radio" network capabilities*.

I think this is one of the first examples that come to mind in this era of ARRL adopting a Not Invented Here (NIH) idea from the positive example set by RRI. In RRI's About page, these mentions leap to prominence in my reading:

> The foundation for our networks is the unique, survivable high frequency radio spectrum in which we operate a modified, hybrid mesh network called the "Digital Traffic Network" (DTN)…

> … maintains an automated high frequency Digital Traffic Network using an RF-only hybrid mesh topology for maximum efficiency.
>
> In cooperation with the Winlink Development Team, RRI operates a series of region gateways designed to expedite the flow and distribution of record message traffic (e.g. radiograms and radiogram-ICS213 messages) between the systems.

So, kudos to RRI for implementing their ideas in a positive, proactive manner that ended up influencing ARRL NTS to adopt modern digital communications methods for automatic relay of traffic via Amateur Radio HF and VHF / UHF communications.

Again this collaboration is a really positive development for Amateur Radio.

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Comments Summary From Previous Issue

Comments from Zero Retries 0211:

- Mention that the NinoTNC is another unit that uses an inexpensive microcontroller to execute DSP algorithms.
- Besides that M17 is an entirely open source system, what is the point versus other VHF / UHF digital voice systems used in Amateur Radio?
    - That M17 is entirely open source… ***is***… the point of M17.
- Kudos to G4KLX for his work on MMDVM (and I agree).
- "It's not entirely clear to me what your thesis is here vis-a-vis open source…"
    - The main thesis (opinion) is that G4KLX's choice of actions will likely have effects far beyond his intention to "simply" remove M17 support from his MMDVM code.
- Observation about open source contributors sometimes get tired and stop contributing to a project…
    - But it's not been the case, until now (and perhaps a cautionary tale) that functionality deliberately gets removed from an open source project.
- We need an inexpensive "M17 Baofeng". And then in this issue we learn about the LinHT which may well become just such a thing (and much more).

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My ongoing ***Thanks*** to:
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Shreky Stroh, Late Night Assistant Editor In training

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*Keywords in **Bold** are regular mentions in each issue.*